FIG. 1

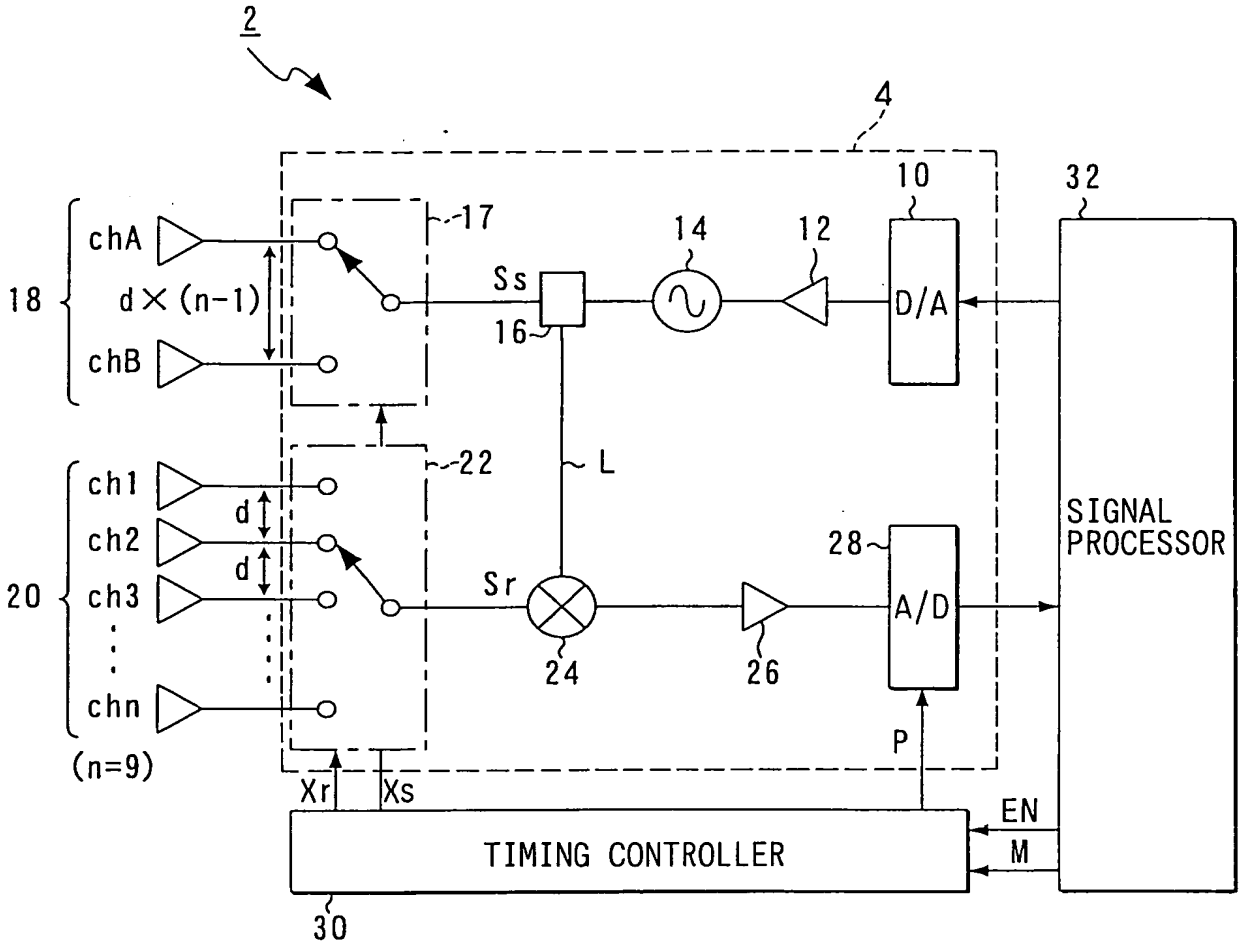

2
4
10
32
chA
d × (n-1)
chB
18
17
Ss
16
14
12
D/A
SIGNAL PROCESSOR
ch1
ch2
ch3
chn
(n=9)
20
d
d
22
L
28
Sr
24
26
A/D
P
Xr
Xs
TIMING CONTROLLER
EN
M
30

FIG. 2

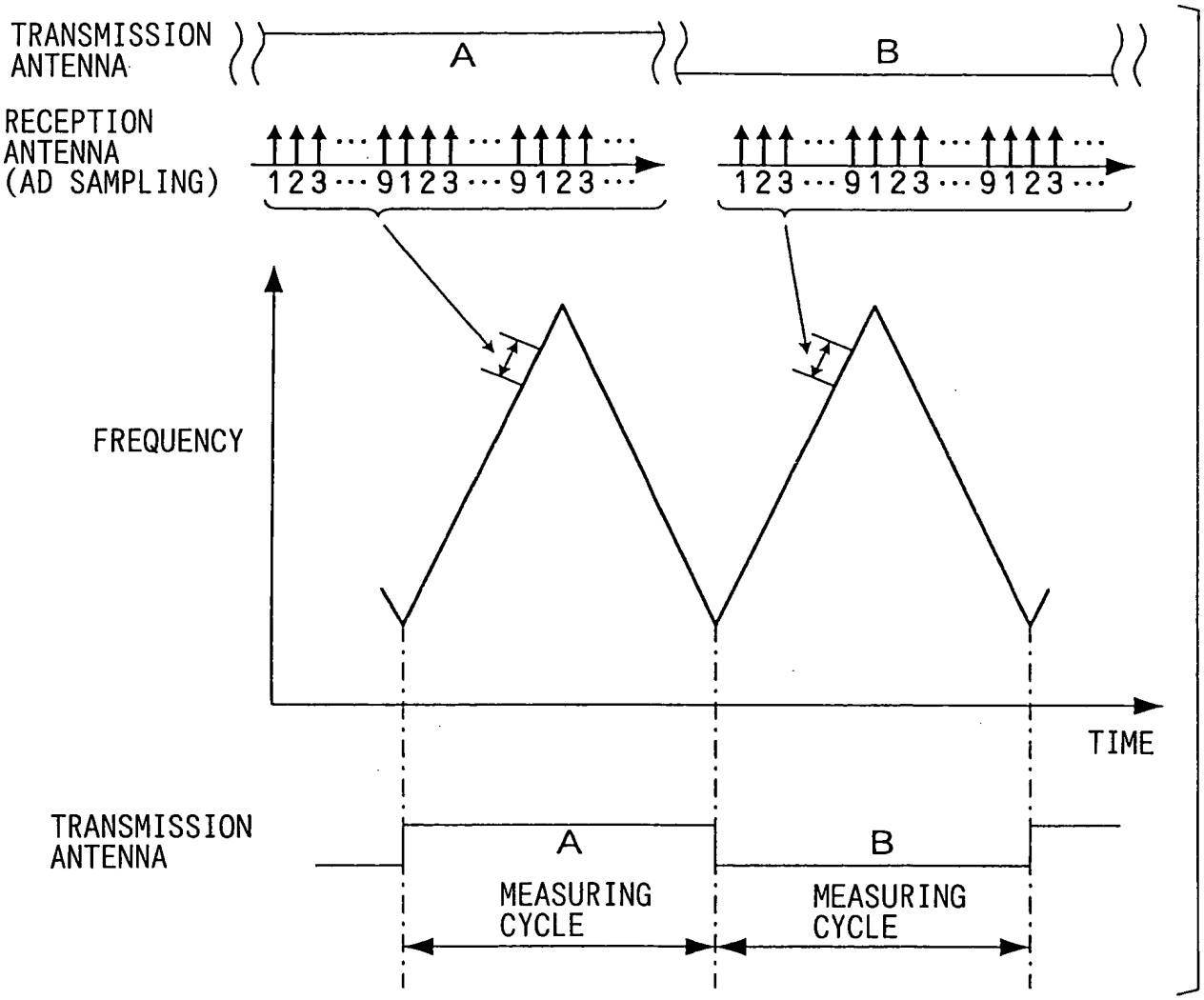

TRANSMISSION ANTENNA
A
B
RECEPTION ANTENNA (AD SAMPLING)
1 2 3 ··· 9 1 2 3 ··· 9 1 2 3 ···
1 2 3 ··· 9 1 2 3 ··· 9 1 2 3 ···
FREQUENCY
TIME
TRANSMISSION ANTENNA
A
B
MEASURING CYCLE
MEASURING CYCLE

FIG. 3

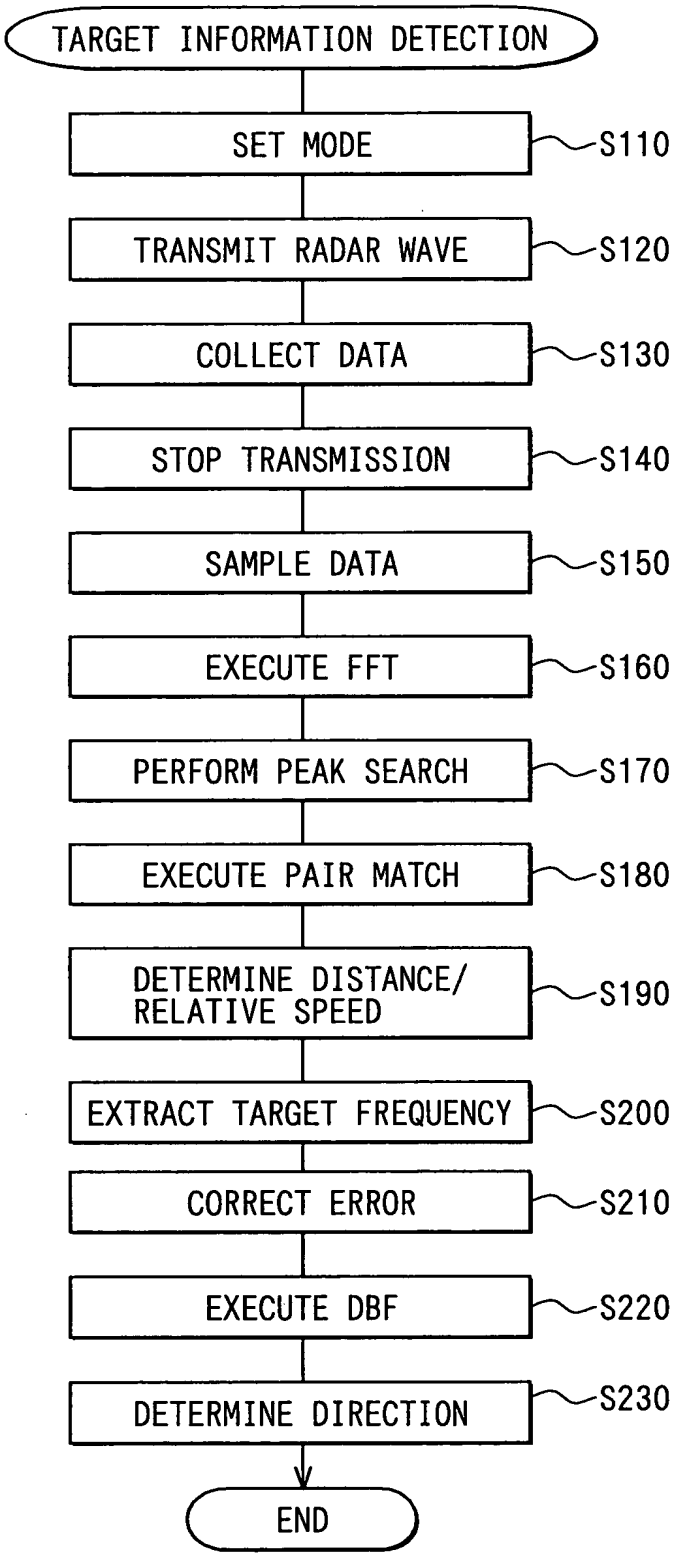

TARGET INFORMATION DETECTION
SET MODE
S110
TRANSMIT RADAR WAVE
S120
COLLECT DATA
S130
STOP TRANSMISSION
S140
SAMPLE DATA
S150
EXECUTE FFT
S160
PERFORM PEAK SEARCH
S170
EXECUTE PAIR MATCH
S180
DETERMINE DISTANCE/ RELATIVE SPEED
S190
EXTRACT TARGET FREQUENCY
S200
CORRECT ERROR
S210
EXECUTE DBF
S220
DETERMINE DIRECTION
S230
END

FIG. 4A

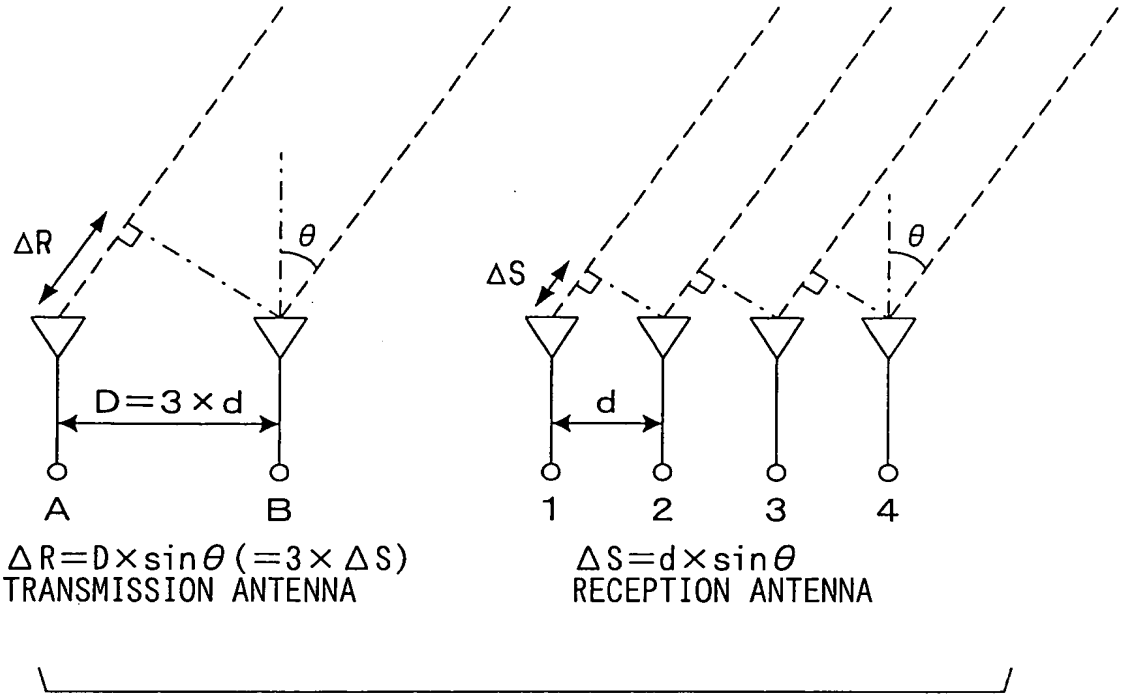


FIG. 4B

CHANNEL	PATH LENGTH (PHASE) DIFFERENCE TO B4	NOTE	
A1	6×ΔS	(=ΔR+3×ΔS)	
A2	5×ΔS	(=ΔR+2×ΔS)	
A3	4×ΔS	(=ΔR+1×ΔS)	
A4	3×ΔS	(=ΔR)	SAME
B1	3×ΔS		
B2	2×ΔS		
B3	1×ΔS		
B4	—		

FIG. 5A
RELATED ART

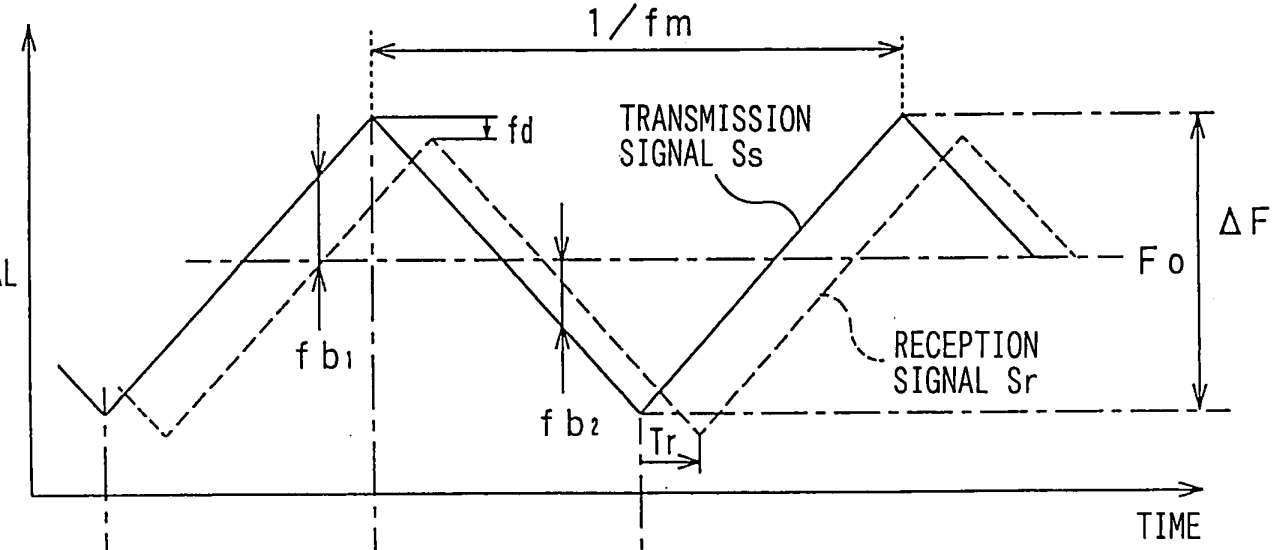


FIG. 5B
RELATED ART

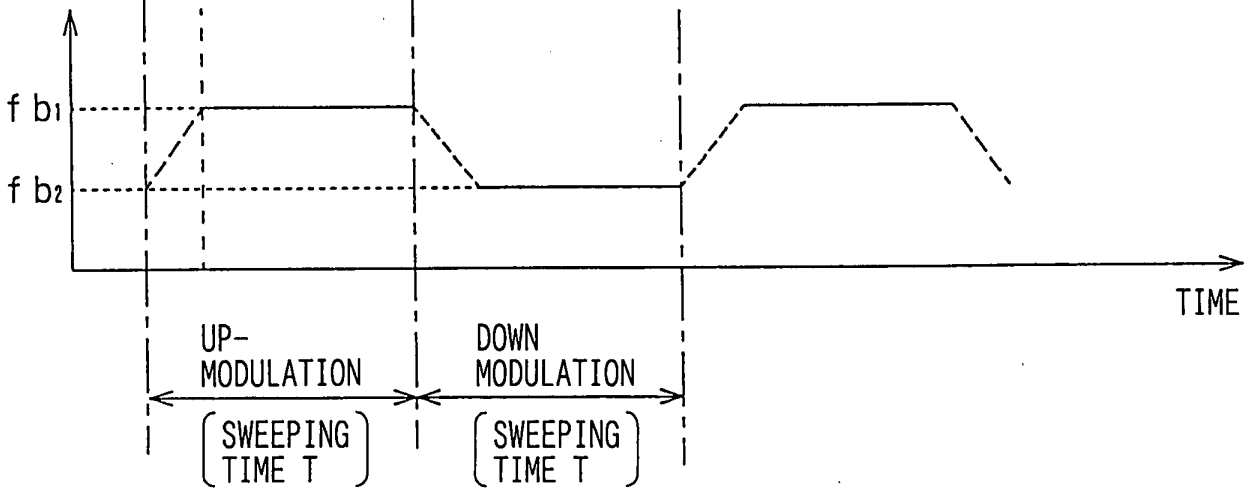


FIG. 6A
RELATED ART

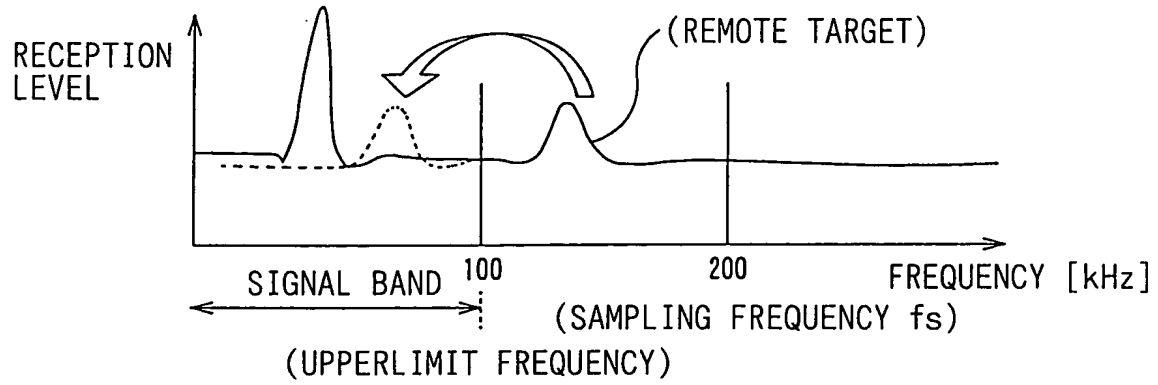


FIG. 6B
RELATED ART

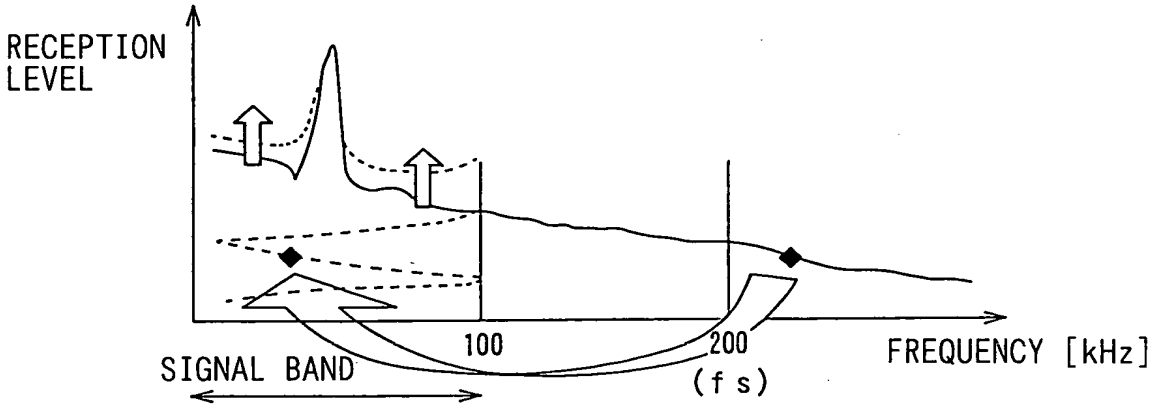


FIG. 6C
RELATED ART

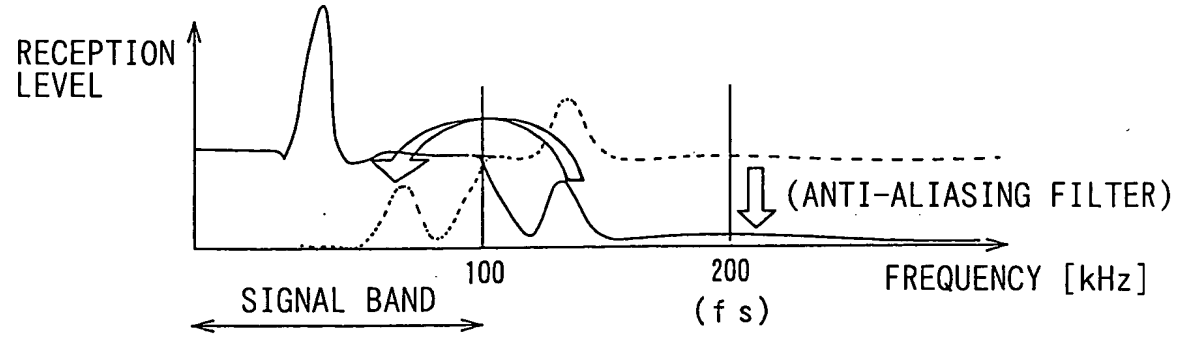


FIG. 7A
RELATED ART

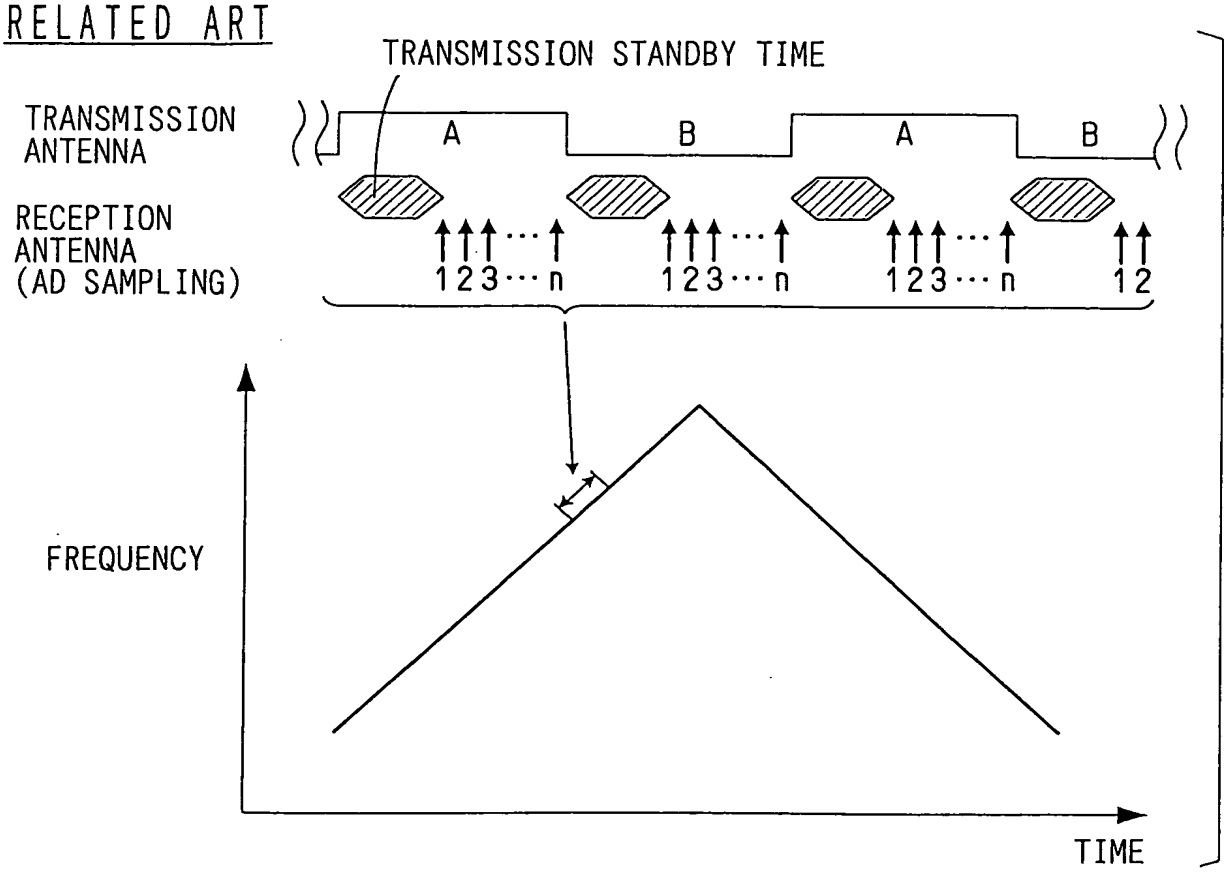


FIG. 7B
RELATED ART

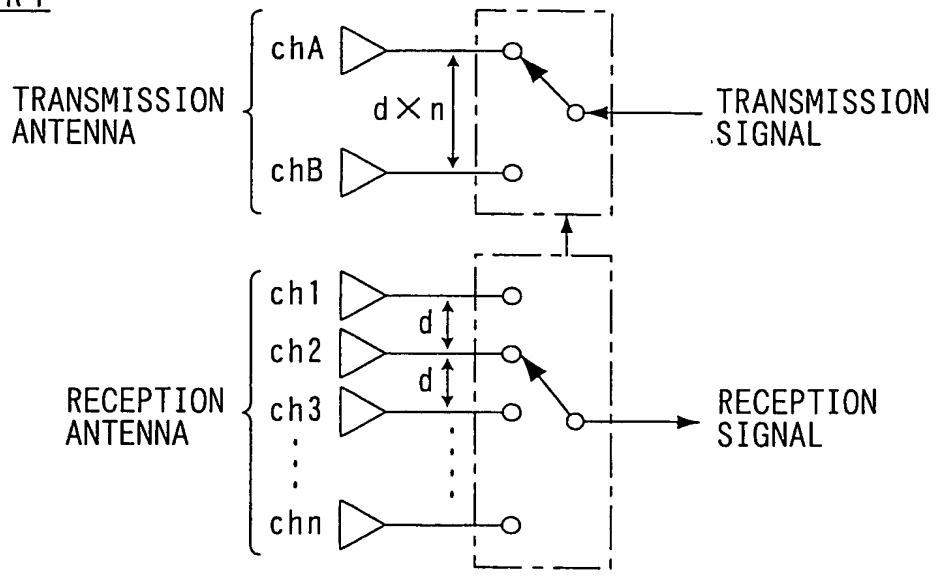


FIG. 8A

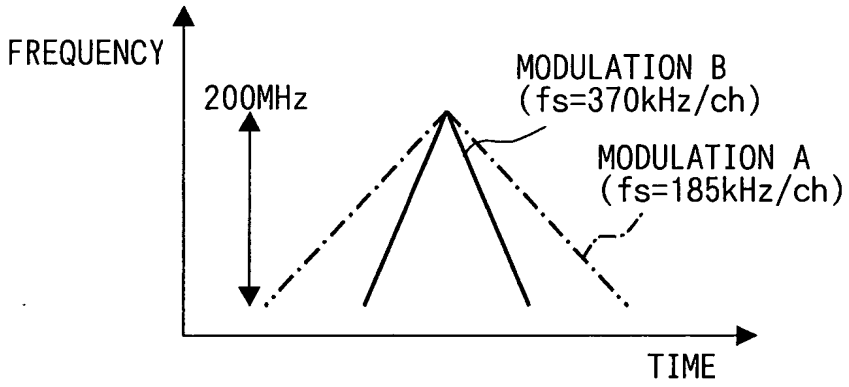
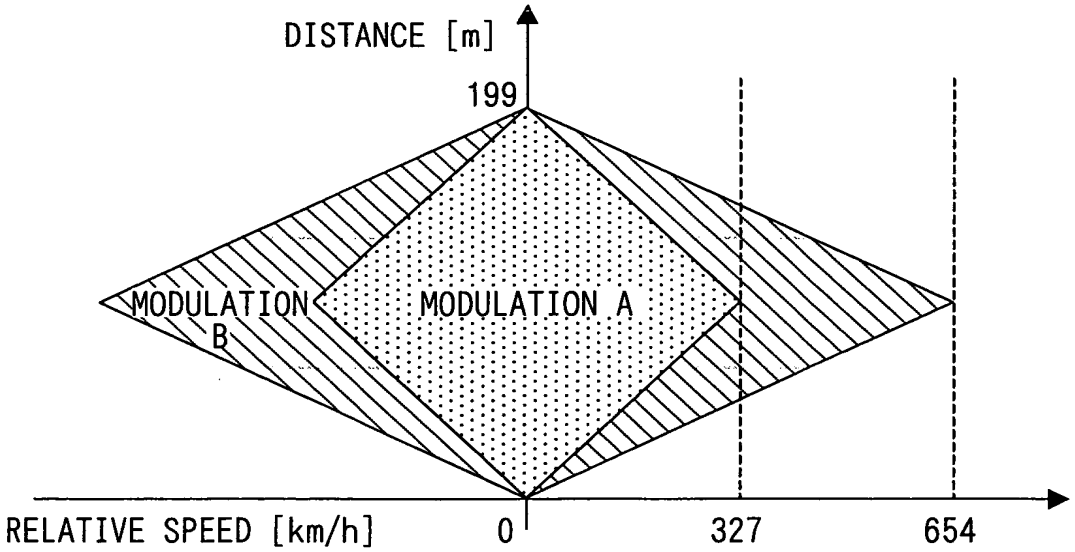

FREQUENCY
200MHz
MODULATION B
(fs=370kHz/ch)
MODULATION A
(fs=185kHz/ch)
TIME

FIG. 8B


DISTANCE [m]
199
MODULATION B
MODULATION A
RELATIVE SPEED [km/h]
0
327
654